A Study of Relationship among Digital Addiction, Revenge Bedtime Procrastination and Academic Buoyancy of Secondary Level Students

Synopsis

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Submitted by

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1.0.0 INTRODUCTION

The Education system in India has undergone an unbelievable change; i.e., in today's time, the mode of receiving education has been tremendously widened from conventional mode, which involves regular schooling, to various parallel modes such as homeschooling, open schooling, and non-attending schools. According to the National Institute of Open Schooling Annual Report (2021-22), 3,84,748 learners were enrolled in the session 2021-22 at the secondary and senior secondary level of academic courses of NIOS. The data mentioned enumerates that nowadays students are not only preferring conventional modes for acquiring education but also preferring other parallel modes to prepare for their future. Digitalization in India has been rapidly growing, which has directly or indirectly influenced various sectors. Education is profoundly impacted by technology, transforming how students learn, teachers teach, and educational institutions operate. According to Statista (2023), India had the world's second-largest internet population at over 1.2 billion users in 2023. Out of these, 1.05 billion users accessed the internet via mobile phones. Estimates suggest that this figure will reach over 1.2 billion by 2050. The data mentioned enumerates that India is one of those countries where internet usage is prevalent, indicating that India is surrounded by technology, digital devices, and digital platforms for education, entertainment, or recreation.

Teenagers interact with digital devices more and more since new devices and software, learning and leisure environments, and apps are being continuously developed (Seema et al., 2022). Technology has opened various doors of opportunity for students; for instance, with just a click, they can get access to quality content across the globe, or even they can subscribe to various educational channels such as DRISHTI IAS, Khan Academy, Unacademy, and so on to prepare for competitive exams. Despite the digital platform's advantages and productivity enhancements, a growing body of literature finds that many people overuse their devices, which connect digitally in ways that interfere with their daily lives (Cho, 2015; Clayton et al., 2015). A report by Social Media Matters, Youth Online Learning Organization, and the Institute for Governance, Policies & Politics (2020), which was focused on the "Patterns of Internet Usage Among Youth in India," states that over 85% of young children own smartphones, and the majority of them spend more than five hours using social media or the internet. The Internet offers plenty of content across various platforms, such as social media, streaming services, news

websites, and forums. This vast array of content can easily lure individuals into spending more time online than intended. With easy access to technology, students are engaging in excessive use of technology, which leads to a phenomenon known as digital addiction. Sometimes this mindless internet surfing can lead to delayed bedtimes and irregular sleep patterns among individuals. Andhi et al. (2022) conducted a study to examine internet addiction disorder and its association with sleep quality in young adults and stated that out of 310 participants, a total of 140 (45.1%) were found to have an Internet addiction. Out of which, 268 (87%) participants showed poor sleep quality. Many studies have proven that the influence of internet addiction on problematic sleep and insomnia was found in 3% of heavy Internet users (Gholami et al., 2013).

The 21st century is not only an era of technology and advancement but also an era of competition, i.e., competition to be first, to be successful, and to be adaptable to the latest demands. Nowadays, students also have to bear the brunt of competition in their lives. The pressure to excel academically and compete with peers may leave students with limited free time for themselves. Academic demands such as homework, studying for exams, and participating in extracurricular activities can consume a significant portion of students' time or their "me time." Engaging in internet surfing before bedtime serves as a way for students to relax after a long day and sometimes also gives them a sense of control over their “me time.". However, this relaxation may come at the expense of sleep hygiene, as exposure to screens can interfere with the body's natural sleep-wake cycle. Individuals experiencing revenge bedtime procrastination may struggle to maintain a consistent sleep schedule, which can impact their overall well-being and potentially affect their academic performance. When faced with academic challenges, students may struggle to cope with them or approach problems with a new perspective. There is an urgent need to know how much time the students are engaging themselves on digital media and does this digital engagement leads to any sort of addiction among students. If yes, then is it affecting students' ability to handle academic stressors or Is this addiction affecting other realms of students' lives like sleep, motivation, health, study habits, peer relationships, and peer pressure? The usage of digital platforms or digital media should be confined to usage rather than negatively affecting students' lives.

1.0.1 DIGITAL ADDICTION

Digital Devices have become an integral part of our daily lives. Human beings are driving into the

“digital era” where through digital devices or digital media one can access whatever content (movies, games, shopping, social networking), wherever or whenever he/she wants. It has become a daily necessity for human learning and life, influencing children’s studies, entertainment, and social interactions. According to Internet World Stats, In June 2022, there were around 755 million Internet users, compared to only 5 million users in December 2000, indicating an internet usage rate of 53.9% of the population. Due to easy access to internet services children can use them anywhere, anytime, wandering on social media, surfing the Internet, and playing video games. Young Minds tend to be naive and thus very vulnerable, the developing brains of children are more prone to the reward mechanisms associated with online activities, such as social media, gaming, and they also get instant gratification from online content which tends to make children addicted to mobile phones, video games, and social media, causing the phenomenon of digital addiction.

The word “Digital Addiction” is a comprehensive term as it refers to addictive behavior related to the use of digital devices and digital platforms which includes mobile phones, computers, internet, video games, and social media platforms. It not only includes internet use for online activities but also includes offline activities such as offline gaming. Smartphones, Video games, and social media apps can be harmful and addictive in the same ways as cigarettes, drugs, or gambling (Alter 2018; Newport 2019; Eyal 2020). Over-exposure to digital technologies or their problematic and excessive use has raised serious concerns about their adverse effects on people's physical and mental health. (Bucci et al., 2019; Ho 2021; Peng et al., 2022). Anxiety, depression, and isolation are the main emotional symptoms that digital addicts typically experience (Zhang et al., 2018) Backache, headaches, weight gain or loss, sleep difficulties, and blurred or strained eyesight are among the main physical signs of digital addiction (Kandasamy et al., 2019).

Digital Addiction can also decrease students' productivity as instead of studying or preparing for their future endeavors they are spending their time on social media, gaming, or entertainment platforms. So, the time and energy which tends to be used on studying or preparing for their exams is consumed by digital devices or digital platforms ultimately reducing the amount of time available for study. Since adolescents contribute a significant proportion of the productive life age of our country, their involvement with internet overuse or addiction may lead to adverse consequences such as sleep

disturbance, procrastination, psychological and physical problems leading to academic decline or suboptimal exam performance.

1.0.2 REVENGE BEDTIME PROCRASTINATION

According to the Sleep Foundation (2019)**,** "Revenge bedtime procrastination is a psychological phenomenon, where people stay up later than they desire in an attempt to have control over the night because they perceive themselves to have lack of influence over events during the day. It describes the decision to sacrifice sleep for leisure time that is driven by a daily schedule lacking in free time.**"** During this state people seldom carve out some time to watch "just one" more episode of their latest series binge or scrolling Instagram or social media platforms or reading a chapter of a book or having late conversations with their friends. According to the Sleep Foundation (2019), the use of electronic devices in bed is 57% on televisions, 90% on music players, 43% on computers, and 64% on telephones.

A study conducted by Kamphorst et al. (2018) aimed to answer the question as to why people may delay their bedtime on purpose, even when they are tired? It was found that the more a person had to "resist desires" during the rest of their day, the more likely they would procrastinate their intended bedtime. This means that the less enjoyable things a person could do during the day, the likelier it was that they would try to reclaim that time at night and engage in the more pleasurable activities that they aren't able to do during the day. People who usually have hectic schedules or lack of free time during the day tend to sacrifice their sleep for leisure activities to get their "me time" and slowly this phenomenon transforms into a habit known as "Revenge Bedtime Procrastination''. Daphne K. Lee (2020) defined the term revenge bedtime procrastination on twitter as 'retaliatory staying up late' or "a phenomenon in which people who don't have much control over their daytime life refuse to sleep early in order to regain some sense of freedom during late night hours". It is a way to find a few hours of entertainment even though it results in insufficient sleep. An example of revenge bedtime procrastination is an exhausted mother staying up late by scrolling on social media after she finally managed to put the kids to bed or a student reading a comic late in the night after they struggled to finish writing an essay or a teenager who spends almost all of their day doing what their teachers and parents tell them to do, so they delay going to sleep because that's a way for them to rebel and feel a sense of control. The desire to relax during busy activities turned out to be a factor in the emergence of the Revenge Bedtime Procrastination (RBP).

Individuals who experience Revenge Bedtime Procrastination will sacrifice sleep time to do fun things (Suni, 2021). A Study by Calamaro et al., (2009) states that teens chat, make phone calls, play computer games or go online after 9 p.m. Similarly, in a study by Van den Bulck, (2007), 62% of adolescents use cell phones in bed with the lights off which ultimately results in fatigue the next day. This phenomenon is often seen as a form of affection or appreciation for the self who has worked hard. However, several studies have shown that Revenge Bedtime Procrastination is associated with stress and low well-being (Kroese et al., 2016) and is a response to unconscious stress and frustration due to long working hours. They even realized that they had to sleep immediately and wanted enough sleep, but failed to do so (Suni, 2021).

1.0.3 ACADEMIC BUOYANCY

Student life is a journey filled with both triumphs and setbacks. Setbacks are an inevitable part of the academic experience of a student, for instance a student receiving lower grades than expected in a test, missing deadlines, struggling with coursework, peer pressure or feeling isolated are some setbacks that a student has to face in their academic life. An individual can either deal with setbacks positively or negatively such as feeling disheartened, depressed or by treating setbacks as temporary hurdles and bouncing back by identifying areas for improvement and maintaining a positive outlook.

Martin and Marsh (2007) postulated the idea of academic buoyancy as the ability of an individual to manage academic challenges and other challenges of schooling. It is defined as “the skill to face academic setbacks and challenges that are typical of the ordinary course of school life”. It is not only about overcoming these challenges, but also about recovering and learning from them, and being stronger in the process. Each person has a different capacity for handling and responding to the common challenges encountered throughout education. Some students may find it difficult to handle the demands and challenges of academic life and may continue to confront obstacles, whereas others may rise above these setbacks so, in the face of educational adversity they can be considered as buoyant. (Condly 2006; Downey 2008) states that students who are not buoyant have more risk of experiencing greater difficulties in the pursuit of their career, especially problems facing the future careers. Martin & Marsh (2008) postulated a five-factor model of academic buoyancy consisting of confidence, coordination, control, composure and commitment. It has been found that academic buoyancy is

positively correlated with the five Cs which also depicts that the students who bounce back from setbacks are found to possess a high level of the five Cs components. Martin and Marsh five factor model was further elaborated (Panjwani & Aliq 2021) proposing seven dimensions of academic buoyancy which are explained as follows:

1. Academic Coordination: The capacity of students to plan their academic activities, schedule them and perform them productively.
2. Academic Clarity: The self-awareness of students', where they can sufficiently clear their position, targets, future and beliefs concerning academics.
3. Composure: The state of students with low anxiety.
4. Academic Climate: The relationship of students' academics with their family and school.
5. Academic Confidence: The self-efficacy of the students', where they have a strong belief to successfully achieve the designated academic task or goal.
6. Academic Commitment: The situation in which a student is self-regulated and committed to meeting the target objectives related to his studies.
7. Self-Control: The alignment of thoughts, feelings, and actions with enduringly valued goals in the face of momentarily more alluring alternatives.

Notably, a growing body of work highlights that academic buoyancy is linked with a range of positive academic outcomes among students, including higher levels of motivation, engagement, well-being, and achievement (Collie et al., 2017; Hirvonen et al., 2020). Researches have shown that academic buoyancy is associated with greater achievement (Aydin & Michou, 2020), greater classroom participation and future academic aspirations (Granziera et al., 2022), lower anxiety (Putwain et al., 2015), lower hopelessness (Hirvonen et al., 2020), and lower school stress (Hofrichter et al., 2021). Academic buoyancy is associated with beneficial achievement-related beliefs (e.g., perceived importance of school), emotions (e.g., enjoyment), and behaviors (e.g., class participation) (Bostwick et al., 2022), and relates positively to students' achievement (Putwain et al., 2020) and is positively related to adaptive coping strategies (e.g., positive reappraisal) and negatively related to burnout (Salmela-Aro & Upadyaya, 2020, Vinter, 2019) and maladaptive strategies (e.g., catastrophizing) (Putwain et al., 2024).

1.1.0 EMERGENCE OF THE PROBLEM

Digital Devices such as smartphones, tablets, and laptops are prevalent in modern society. They are easily accessible, less expensive, and provide a wide range of functions, making it simpler for individuals to interact with them for longer periods. The explosion of mobile applications and games, many of which are free or low-cost, give people limitless entertainment possibilities at their fingertips. The rise of internet and social media platforms has changed how people interact, socialize, and consume information. Nowadays, children and adolescents are introduced to digital devices at increasingly younger ages, often before they fully understand the implications of their usage. This early exposure can lead to the normalization of excessive screen time from a young age. A survey conducted by Statista (2022) revealed that a majority of children aged between 9 and 13 years old in urban India spent more than three hours per day on social media, videos, and games on the Internet. The survey also depicts that 35 percent of parents with children aged 13 to 17 indicated that their teenagers had access to cell phones throughout the day, outside the classroom courses. As digital addiction is growing rapidly among youth it may directly or indirectly affect the other realm of individual life. According to Kumar and Mondal (2018), Digital Addiction can have negative consequences such as decreased academic performance, increased stress levels, and social isolation among students.

In today's competitive time, people look at the educational success of their children as a social status symbol and moreover most of them believe that academic success is the only way to a successful career. This has resulted in increased pressure on the children and it gets worse at the secondary level because most of the future career choices are made based on grades at this point. Due to systematic demands and academic stressors such as heavy workloads, challenging coursework, academic deadlines, performance pressure, parental pressure, competition and uncertainty about future day by day, there is an increased academic stress among secondary level adolescents. Every individual has a different ability to deal with these academic stressors like some students deal with these stressors with a positive outlook and vice-versa. In academic outlook, the individuals who deal with these setbacks with a positive outlook i.e., treating them as opportunities are considered as buoyant and vice-versa. It was found that academic buoyancy helped to lower the impact of such academic stressors (Putwain et al., 2011; Putwain et al., 2015).

So, the researcher came across a question that if digital addiction is related to academic stressors and academic stressors have a relationship with academic buoyancy. Then maybe digital addiction and academic buoyancy are also related. If so, then what type of relationship is there? Apart from this, the researcher also wants to know if a student who is digitally addicted is academically buoyant or not and vice versa.

The 21st century is not only an era of technology and advancement but also an era of competition, i.e., competition to be first, to be successful, and to be adaptable to the latest demands. Nowadays, students also have to bear the brunt of competition in their lives. The pressure to excel academically and compete with peers may leave students with limited free time for themselves. Academic demands such as homework, studying for exams, and participating in extracurricular activities can consume a significant portion of students' time or their "me time." Engaging in internet surfing before bedtime serves as a way for students to relax after a long day and sometimes also gives them a sense of control on their “me time”. Due to which sometimes students form a notion that their “me time” is basically spending time or engaging in digital devices. The researcher wants to know if getting an ample amount of time to spend on digital devices gives a sense of me-time or vice versa. As these phenomena are very interconnected, this raises some more questions in the mind of the researchers, such as, Is a highly digitally addicted student incurred the phenomena of revenge bedtime procrastination or not? And are less digitally addicted students revenge bedtime procrastinating or not? or Is digital addiction related to revenge bedtime procrastination? Is revenge bedtime related to academic buoyancy? Is digital addiction, academic buoyancy, and revenge bedtime procrastination interrelated? The researcher also came across a fact that these phenomena are highly prevalent in youth, due to which the researcher wants to study digital addiction, academic buoyancy, and revenge bedtime procrastination among youth.

1.2.0 JUSTIFICATION OF THE STUDY

It is often said, “If wealth is lost nothing is lost, but if health is lost something is lost”. This statement is often underestimated in the realm of students' lives as people believe that students have ample time to adjust, to adopt and to form healthy lifestyle habits but people forget to understand that the earlier students are introduced to healthy habits, the more likely these habits will stick for years. Nowadays, social media, digital platforms, and the internet are overflowing with information about how important

it is to get enough sleep. Paruthi et al. (2016) recommends that teens aged 13 to 18 should get 8 to 10 hours per day, and children aged 6 to 12 should regularly sleep 9 to 12 hours per day.

A study carried out by Vaidya et al. (2021) revealed that almost 33.9%, of children sleep for 6 hours or less. More than 50% of these children sleep after midnight/ midnight and wake up at 6 a.m. or even before. The above data enumerates that nowadays we have a population of students who are not getting adequate amounts of sleep. Unlike twenty years ago, when our only options for entertainment were watching movies, live plays, concerts, and other events that took place essentially outside our four walls. However, these days, we have access to a wide range of entertainment options via a tiny device called a mobile phone. Nowadays, with entertainment easily accessible, individuals choose amusement over sleep (Pychyl & Sirois, 2016). Everyone around us has normalized excessive use of digital devices to the point where we are not witnessing its effects in other spheres of personal life, particularly in the lives of students, where excessive use of digital devices can hinder students' progress, health, sleeping patterns, ability to make decisions, and so forth.

Poor sleep quality can lead to cognitive deficiencies such as reduced concentration, delayed response times, and poor decision-making skills (Jain & Raj, 2024). Several studies have recently highlighted that academic performance and learning capacities are closely linked to sleep patterns and levels of sleepiness (Fallone et al., 2002; Wolfson & Carskadon, 2003) In order to stop normalizing excessive screen time in the future and to take effective action to limit screen time among individuals, the current study aims to draw attention to this issue as a problem that needs to be addressed. According to a study by Faught et al. (2017), there was a positive link between academic achievement and screen media use when teenagers engaged in screen-based activities for two to four hours a day; however, there was a negative correlation when they spent seven hours or more. However, a study by Sánchez-Martínez and Otero (2008) showed that high internet surfing frequency and no internet use were both associated with academic failure. Though there are various researches related to Sleep deprivation, Bedtime Procrastination, Digital Addiction, Screen Time and its association with academic performance, health, well being but there is no independent research in India which seeks to find out a correlation among Digital Addiction, Revenge Bedtime Procrastination and Academic Buoyancy on secondary level students.

1.3.0 RESEARCH QUESTIONS

These are the following questions that researcher seeks to find through her study:

Q1: How does digital engagement lead to digital addiction among secondary level students?

Q2: What are the differences between girls and boys with reference to digital addiction, revenge bedtime procrastination and academic buoyancy?

Q3: What are the differences between students who are regular and those who are irregular to school with reference to digital addiction, academic buoyancy and revenge bedtime procrastination?

Q4: What are the differences among students who belong to different SES with reference to digital addiction, revenge bedtime procrastination and academic buoyancy?

Q5: How are digital addiction, revenge bedtime procrastination and academic buoyancy related to each other?

Q6: What activities are associated with revenge bedtime procrastination?

2.0 STATEMENT OF THE PROBLEM

A study of relationship among Digital Addiction, Revenge Bedtime Procrastination and Academic Buoyancy of Secondary level students.

3.0 DEFINITIONS OF THE TERMS USED IN THE STUDY

3.1.0 DIGITAL ADDICTION

"Digital Addiction (DA) is a problematic relation to the technology described by being compulsive, obsessive, impulsive, and hasty". (Alrobai, 2018)

Operational Definition

In the present study "Digital Addiction" is a comprehensive term that refers to addictive behavior related to the use of digital devices and digital platforms which includes mobile phones, computers, internet, video games, and social media platforms. It not only includes internet use for online activities but also includes offline activities such as offline gaming.

3.2.0 REVENGE BEDTIME PROCRASTINATION

"Revenge bedtime procrastination is a psychological phenomenon, where people stay up later than they desire in an attempt to have control over the night, because they perceive themselves to have a lack of influence over events during the day. It describes the decision to sacrifice sleep for leisure time that is

driven by a daily schedule lacking in free time.**”** **(**Sleep Foundation, 2019)

Operational Definition

In the present study, Revenge Bedtime Procrastination is a term used to describe a state where individuals delay going to bed in order to reclaim personal time that they feel was lost or taken away during the day.

3.3.0 ACADEMIC BUOYANCY

“Academic buoyancy is defined as students' ability to successfully deal with academic setbacks and challenges that are typical of the ordinary course of school life”. (Martin and Marsh 2008).

Operational Definition

In the present study, Academic Buoyancy refers to learners’ potential to face challenges and difficulties that are regular in nature under educational settings or environment.

4.0.0 OBJECTIVES OF THE STUDY

1. To study digital addiction among students of secondary level.

1.1 To find out the present status of digital addiction in secondary level students.

1.2. To compare the digital addiction between girls and boys of secondary level.

1.3 To compare the digital addiction of students with high, moderate and low socioeconomic status.

1.4. To compare the digital addiction of regular and irregular secondary level students.

2. To study revenge bedtime procrastination among students of secondary level.

2.1. To find out the present status of revenge bedtime procrastination in secondary level students.

2.2. To compare revenge bedtime procrastination between girls and boys of secondary level

2.3. To compare revenge bedtime procrastination of students with high, moderate and low socioeconomic status.

2.4. To compare revenge bedtime procrastination of regular and irregular secondary level students.

3. To study academic buoyancy among students of secondary level.

3.1. To find out the present status of revenge bedtime procrastination in secondary level students.

3.2. To compare academic buoyancy between girls and boys of secondary level.

3.3. To compare academic buoyancy of students with high, moderate and low economic status.

3.4 To compare academic buoyancy of regular and irregular secondary level students.

4. To study the relationship between digital addiction and revenge bedtime procrastination of secondary level students.

5. To study the relationship between digital addiction and academic buoyancy of secondary level students.

6. To study the relationship between revenge bedtime procrastination and academic buoyancy of secondary level students.

5.0.0 HYPOTHESES OF THE STUDY

$H_0$1: There will be no significant difference between the digital addiction of girls and boys of secondary level.

$H_0$2: There will be no significant difference among the digital addiction of students with high, moderate and low socioeconomic status.

$H_0$3: There will be no significant difference between the digital addiction of regular and irregular secondary level students.

$H_0$4: There will be no significant difference between the revenge bedtime procrastination of girls and boys of secondary level.

$H_0$5: There will be no significant difference among the revenge bedtime procrastination with high, moderate and low socioeconomic status of secondary level students.

$H_0$6: There will be no significant difference between the revenge bedtime procrastination of regular and irregular secondary level students.

$H_0$7: There will be no significant difference between the academic buoyancy of girls and boys of secondary level.

$H_0$8: There will be no significant difference among the academic buoyancy of students with high, moderate and low socioeconomic status of secondary level students.

$H_0$9: There will be no significant difference between the academic buoyancy of regular and irregular secondary level students.

$H_0$10: There will be no significant relationship between digital addiction and academic buoyancy of secondary level students.

$H_0$11: There will be no significant relationship between digital addiction and revenge bedtime procrastination of secondary level students.

$H_0$12: There will be no significant relationship between revenge bedtime procrastination and academic buoyancy of secondary level students.

6.0.0 VARIABLES OF THE STUDY

The variables of the present study are:

Independent Variable: Gender, Socioeconomic Status, Regularity in attending school.

Dependent Variable: Digital Addiction, Revenge Bedtime Procrastination and Academic Buoyancy

7.0.0 DELIMITATIONS OF THE STUDY

The study will be delimited with respect to the following points:

1. The study will be delimited to Agra City only.
2. The study will be delimited to 1000 secondary level students of class 9^{th} and 10^{th} of Agra City.
3. The study will be delimited to self- reported data of secondary level students on digital addiction, revenge bedtime procrastination, academic buoyancy and socioeconomic status.

8.0.0 METHOD OF THE STUDY

Keeping the nature of the problem in mind, the researcher will use Descriptive Survey Method of research in the present study. According to Dr. Y.P. Aggarwal (2008) as cited by Salaria (2012), Descriptive Research is devoted to the gathering of information about prevailing conditions or situations for the purpose of description and interpretation. This type of research method is not simply amassing and tabulating facts but includes proper analyses, interpretation, comparisons, identification of trends and relationships.

9.0.0 SAMPLING PROCEDURE OF THE STUDY

9.1.0 Population of the study

The population of the present study comprises secondary level students of class 9^{th} and 10^{th} of Agra City.

9.2.0 Sampling Frame

The sampling frame of the present study includes secondary level children of class 9^{th} and 10^{th} of Agra city. The list of recognized secondary level schools of different boards is obtained from their respective

websites. According to those lists there are 156 schools affiliated from C.B.S.E, 675 U.P Board, 45 I.C.S.E Board and Other boards schools in Agra District. As the study is confined to Agra City only, the researcher will take 20 secondary level schools of all the available boards of Agra City for the present study.

9.3.0 Sampling Method

In the present study, stage sampling will be used as it involves selecting the sample in stages, that is, taking samples from samples. In the first stage, four types of secondary boards (U.P., C.B.S.E., I.C.S.E., and other boards) will be selected, and then in the second stage, schools will be selected on the basis of ownership and funding (government, aided, and private). Then afterwards, in the third stage, schools will be selected on the basis of type of schooling (co-educational and single-gender) and then one school from each category will be selected randomly. For selecting the number of students, systematic random sampling will be used. From each school, 50 secondary level students of class 9^{th} and 10^{th} will be selected for the present study.

9.4.0 Sample Size

The number of secondary level students of Agra city cannot be precisely obtained as this type of data is highly official and is not under the reach of the researcher. So, the researcher has calculated the adequate sample size by using a sample size calculator suggested by (Cohen et al., 2017) According to Cohen et al. (2017) if the Population size is unknown

Confidence level: 99 %

Confidence Interval: 4%

The adequate sample is 1040.

So, for the present study the sample size will be 1000 secondary level students of class $9^{th}$and 10^{th} of Agra City.

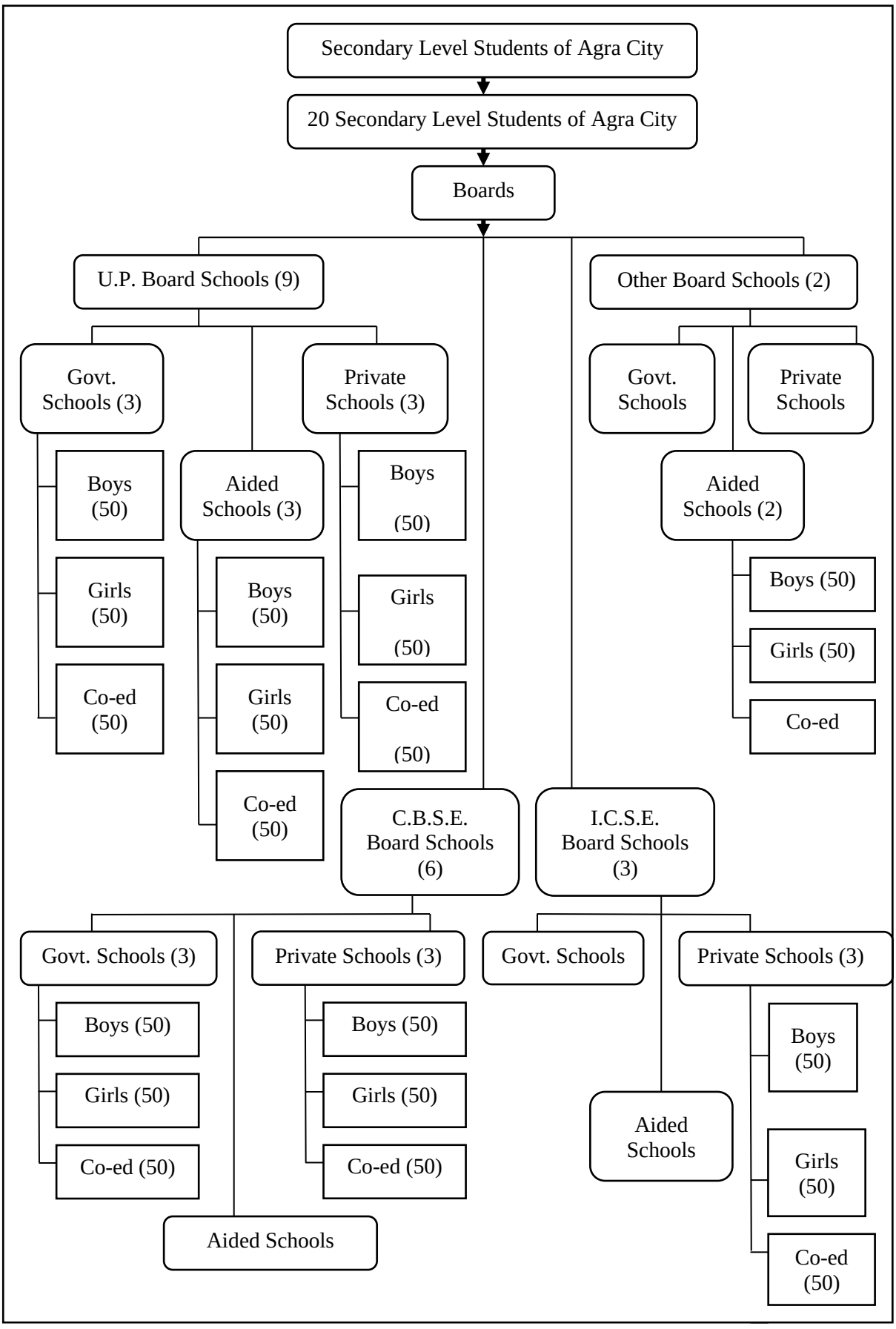

Figure 1: Sample of the Study

10.0.0 TOOLS OF THE STUDY

1. Digital Addiction

To assess digital addiction of secondary-level students various digital addiction scales have been reviewed such as:

Table 1: Rationale of Tool Selection

Name of the Tools	Author	Year	Status	Reasons
The Digital Addiction Scale	Ahmet Kesici, Nazenin Fidan	2018	Rejected	The tool is used to assess digital addiction of university students
The Digital Addiction Scale for Children	Nazir S. Hawi, Maya Samaha & Mark D. Griffiths	2019	Rejected	The tool is used to assess digital addiction of children of 9-12 years
Digital Addiction Scale	Tuncay Dilci	2019	Rejected	The tool is used to assess digital addiction of university level students of 19 years or above
Digital Addiction Scale for Teenagers	Riin Seema, Mati Heidmets, Kenn Konstabel, & Ene Varik-Maasik	2021	Selected	The tool is used to assess digital addiction of teenagers aged 11-19 years

After reviewing the above-mentioned tools, the researcher has decided to use the Digital Addiction Scale for teenagers by (Seema et al., 2021). The tool comprises 10- items that measure teenagers' level of digital addiction. The scale includes statements that describe some ways of using digital devices and the related feelings. It is a 7-point scale (1 never-7 very often) with an internal. consistency of α =.86.

2. Revenge Bedtime Procrastination

To assess Revenge Bedtime Procrastination of secondary level students, a self-constructed tool will be made. The dimensions of the tool will probably be delay, self-regulation failure, and revenge. Other questionnaire that was explored but not seems suitable for the current study.

Table 2: Tool Explored by Researcher

Name of the Tool	Author	Year	Status	Reasons
Revenge Bedtime Procrastination Scale	Jason Wessel	2023	Rejected	The tool is undergoing active development for reliability and validity testing

3. Academic Buoyancy

To assess Academic Buoyancy of secondary level students following academic buoyancy scales have been reviewed such as:

Table 3: Rationale of tool selection

Name of the Tools	Authors	Year	Status	Reasons
Academic Buoyancy Scale	Martin & Marsh	2005	Rejected	The tool doesn't cover all dimensions of academic buoyancy
Academic Buoyancy Scale	Mustafa Ali Khalaf & Mohammed A. A. Abulela	2019	Rejected	The tool is used to assess academic buoyancy of undergraduates
Academic Buoyancy Scale	Divya Rajkumar Panjwani & Zeba Aqil	2020	Accepted	The tool covers all dimensions of academic buoyancy

After reviewing the above-mentioned tools, the researcher has decided to use the Academic Buoyancy Scale by (Panjwani & Aliq 2020). The tool comprises seven dimensions of academic buoyancy, such as coordination, clarity, composure, academic climate, confidence, commitment, and self-control. The reliability of the Academic Buoyancy Scale was found to be 0.945 through Pearson's correlation and 0.972 through Cronbach's alpha statistics, which shows that the tool is highly reliable.

4. *Socioeconomic Scale*

To assess socioeconomic status of secondary level students following socioeconomic scales have been reviewed such as:

Table 4: Rationale of Tool Selection

Name of the Tools	Authors	Year	Status	Reasons
B. G. Prasad Socioeconomic Status Classification	Sushmitha Mahantshetti, Jyoti Singh and Srihari Dhandapani	2023	Rejected	Based on consumer price index of 2023 and income is the only dimension to assess SES
Kuppuswamy Socioeconomic scale	Manu Krishnan Radhakrishnan Sharath Burugina Nagaraja	2023	Rejected	Based on consumer price index of 2023
Kuppuswamy Socioeconomic scale	Irena Mandal Samar Raesa Hossain	2024	Selected	Based on consumer price index of 2024 and income, occupation and education are three dimensions to assess SES

After reviewing the above-mentioned tools, the researcher has decided to use the Kuppuswamy socioeconomic scale by (Hossain & Mandal 2024). The scale uses a multidimensional approach for socioeconomic status (SES) assessment i.e., income, education and occupation. The Kuppuswamy (SES) scale is modified considering the Consumer Price Index (CPI) 2024 which makes the tool highly valid.

11.0.0 STATISTICAL TECHNIQUES

For the present study, both descriptive and inferential statistics will be applied to analyze and collect the

data for findings and conclusions.

11.1. Descriptive Statistics

- Mean: The mean is often calculated because it provides the average value of datasets.
- Standard deviation: It will be used as a measure of variability or dispersion between datasets.
- Product Moment Correlation Coefficient: It is a measure of the strength and direction of the relationship between two variables.

11.2. Inferential Statistics

- t-test: It is a statistical analysis commonly used in research that will be employed in this study to determine the significance difference of means between girls and boys, regular and irregular students with reference to digital addiction, academic buoyancy, and revenge bedtime procrastination.
- t-test of Correlation: A t-test for correlation assesses the significance of the correlation coefficient between two variables. It helps determine if the observed correlation is statistically significant.
- ANOVA: Analysis of Variance will be used for studying the significant difference among students who belong to high, moderate and low socioeconomic status on the variables under study.

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